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ABSTRACT

Neither expectancy (VIE) theory nor goal setting alone are effective determinants of individual effort and task performance. To test the combined ability of VIE and goal setting to predict effort and performance, 44 real estate agents and their managers completed questionnaires. Quarterly income goals predicted managers' ratings of agents' effort, while VIE theory predicted agents' self-rated effort. Results showed that neither effort measure was significantly related to performance. However, both goal setting and VIE theory contributed significant, independent increments to the total variance in agents' quarterly income. The findings showed that goal setting and VIE theory can be complementary, rather than redundant when used in studies that allow the expression of their constructs. (BH)

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Goal Setting and Expectancy Theory

Predictions of Effort and Performance

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Abstract

Expectancy theory (VIE) and goal setting predictions of effort and performance were tested in a sample of 44 real-estate agents. Quarterly income goals predicted managers' ratings of agents' effort while VIE theory predicted agents' self-rated effort. Neither effort measure was significantly related to performance. However, both goal setting and VIE theory contributed significant, independent increments to the total variance in agents' quarterly income. The need to develop integrative models versus conducting "critical test" research was stressed.

Goal Setting and Expectancy Theory

Predictions of Effort and Performance

The "flagship" of the motivational theory fleet is clearly expectancy (VIE) theory (Vroom, 1964), although its conceptual and heuristic elegance belies its practical utility for predicting either effort or performance. In terms of self-rated effort (an arguably contaminated criterion), VIE rarely accounts for more than 12% - 15% of the variance while that explained in more independent ratings (e.g., supervisors or other observers) is typically less than 10% (Campbell & Pritchard, 1976). Furthermore, while VIE theorists justifiably argue that effort is a more appropriate criterion than performance, the theory does not predict effort much better than it predicts performance (Mitchell, 1974; Schwab, Olian-Gottlieb, & Heneman, 1979).

In contrast, the technique of goal setting (Locke, 1968) posits a simple bivariate, linear relationship in which the difficulty of a specific goal typically accounts for 40% to 65% of the variance in performance. Unfortunately, goal setting lacks the conceptual development requisite for theory status even though it is frequently referred to as such (Locke, Shaw, Saari, & Latham, 1981).

There have been several attempts to integrate VIE and goal setting models. Campbell, Dunnette, Lawler, & Weick (1970) used the term "task goal" in their "hybrid expectancy model", although it is not clear whether such goals are supposed to have unique motivational properties or whether the term simply clarifies the notion of first- versus second-level outcomes. The clearest conceptual model to date was presented by Dachler and Mobley (1973). They contend that a task goal, "the level of performance which an individual states

he is trying to achieve . . . reflects the same factors . . . that are related to the level of performance with maximum expected utility" (p. 400). That is, task goals are functionally equivalent to an individual's choice of performance level because they have identical antecedents (expressed in the VIE formula) and the same consequence (level of effort). In other words, Dachler and Mobley's VIE model completely subsumes the notion of task goal which, in the interest of parsimony, becomes superfluous theoretical baggage. This view is supported by Matsui, Okada, and Mizuguchi (1981) who contend that "expectancy theory can predict the goal theory postulate" (p. 57). In contrast, Mento, Cartledge, and Locke (1980), citing methodological problems in the studies supporting VIE over goal setting, presented evidence from two laboratory studies in which the perceived probability of goal accomplishment was significantly correlated with the acceptance of assigned goals but not with performance. However, these authors tested the separate components of VIE theory without presenting data regarding the full VIE effort prediction (Dachler & Mobley's maximum expected utility).

Dossett (1981) presented models of goal acceptance and goal commitment partially integrating goal setting and VIE. However, he refrained from making sweeping statements regarding the supremacy of one motivational approach over the other. This point of view is consistent with Greenwald's (1975) concern regarding the logical futility and inconclusiveness of "crucial" tests of cognitive theories, each of which can "account adequately for the results 'predicted' by the other" (p. 490). Campbell (1982) echoes this concern suggesting that "formulating competing hypotheses that can be pitted against each other" is not "very valuable advice" (p. 697).

Instead of trying to create such "critical tests", theories with demonstrable heuristic and practical utility should be investigated in

combination under conditions which do not artificially "engineer" a favored theoretical outcome. Studies combining goal setting and VIE in applied settings have rarely been reported in the literature (Mitchell, 1982). Ideally, such studies should be conducted in a context in which each theory can be optimized, viz., a situation in which rewards are explicitly contingent on performance and in which performance is largely a matter of individual effort. Moreover, task goals should be a function of individual rather than organizational choice, the essence of VIE theory. Thus, real-estate agents working solely on a commission basis and setting their own income (performance) goals were chosen to test the combined ability of VIE and goal setting to predict individual effort and task performance.

Method

Subjects and Procedure

The sample consisted of 49 real-estate salespersons affiliated with four firms in a midwestern city. All subjects were "conventional" agents, meaning that approximately 55% of their total commission income is retained by the company. Questionnaires were distributed at company sales meetings where the researchers provided a brief description of the study. Participation was voluntary, but each respondent was asked to sign his/her name in order to match questionnaire data with the respective office manager's rating of the respondent's effort. Although confidentiality of responses was assured, this factor, along with the later request to report income for the subsequent quarter, made the final sample size (44) relatively small.

Instruments

Goals and Expectancies. As suggested by Mitchell (1974), conferences were held with several real-estate agents on separate occasions to generate

outcomes relevant to real-estate salespersons. The valence of seven second-level outcomes (i.e., recognition, personal satisfaction, widening circle of acquaintances, feelings of security, offering good service, leisure time with family and friends) was rated on 5-point scales ranging from "very undesirable" to "very desirable". Following Vroom (1964), the instrumentality for attaining these outcomes was measured as their correlation (scale anchors ranged from "impossible" to "certain") with the attainment of two first-level outcomes (maximizing net income and personal growth and development). Following Cambell, et al. (1970), expectancy (probability) of attaining the first-level outcomes was assessed on 10-point scales anchored with "0-9" and "90-99" at the low and high ends, respectively. Agents were asked to set an income goal for the next quarter; the probability of goal accomplishment was measured in the same fashion as the expectancy of attaining first-level outcomes. Following Mitchell (1974), the model thus becomes $E_I[\Sigma E_{II}(\Sigma IV)]$ where:

E_I = the perceived probability of goal accomplishment,

E_{II} = the perceived probability of receiving first-level outcomes,

I = the perceived correlation between first and second-level outcomes,

and V = the valence or desirability of outcomes.

Since VIE theory predicts an individual's performance level and choice of effort level, and since the real-estate agents set their own performance goals, the quarterly income goal is, by definition, Dachler and Mobley's (1973) level of performance with the maximum expected utility (MEU). Thus, MEU is the predicted level of effort generated by VIE theory.

Effort. A subjective estimate of effort was obtained by asking "How much effort do you expend on your job" rated on a 5-point scale ranging from "minimum effort" to "maximum effort". Using the same type of scale, an independent effort rating was obtained from the office manager (supervisor) for each agent.

Performance. Three months after the administration of the questionnaire, the 49 respondents were asked to report their commission income during the preceding quarter; 44 complied with the request.

Results

Table 1 shows the zero-order correlations among the variables in the study. As in most VIE studies, self rated effort was more predictable than independent (manager) ratings and the magnitude of these correlations is typical (Campbell and Pritchard, 1976). Similarly, maximum expected utility (MEU, the VIE prediction) correlated as well or better with performance (income) as it did with either rating of effort. Quarterly income goal was related to both effort and performance about as well as was MEU. These conclusions are conservative in that, because of sample size, significant relationships must represent at least 9% common variance.

Insert Table 1 about here

Table 2 indicates that both independently- and self-rated effort were significantly predicted by MEU and quarterly income goal. However, because of the correlation between the predictor variables, only one predictor was related to each effort rating. The quarterly income goal was the only significant contributor to the manager's effort rating even though the managers had no knowledge of the agents' performance goals. It is probable that goal difficulty is a function of prior performance, of which the managers almost certainly were aware. This is particularly likely because office managers almost never observe agents except when they are in the office. This is obviously a deficient sampling of behaviors from which to make an accurate estimate of effort.

In contrast, only MEU significantly contributed to self-rated effort. Of

course, one cannot discount the potential problem of method variance as a contributing factor to the strength of this relationship (Campbell & Pritchard, 1976; Mitchell, 1974). In any event, the variance accounted for in these ratings compared to most studies is average to low (Campbell & Pritchard, 1976; Mitchell, 1974; Schwab, Olian-Gottlieb, & Heneman, 1979).

Insert Table 2 about here

Performance results are presented in Table 3 for MEU, quarterly income goal, and self-rated effort only; the equation with managers' effort ratings produced identical conclusions. Effort was not related to performance although MEU was a significant contributor. However, quarterly income goal accounted for slightly over 2 1/2 times more variance than did MEU.

Insert Table 3 about here

Discussion

The results of the effort predictions in this study were disappointing although not at all surprising (cf., Campbell & Pritchard, 1976). While we agree with Mitchell (1982) and others that motivation and performance are not the same, we believe a moratorium should be placed on the use of effort ratings until methods are developed to better operationalize this ill-defined construct.

This study has shown that goal setting and VIE theory can be complementary rather than redundant when the situation allows the expression of their respective constructs to manifest in behavior (Mitchell, 1982). Moreover, their combined effects, accounting for 50% of the variance in quarterly income (a highly contaminated criterion), has positive implications

for practical utility. The unique contribution of each motivational approach to performance in these data should be a signal for renewed efforts toward constructive integration of these theories. Such a model should explicate the conditions under which their relative contributions to predicted variance should be greater or lesser. In the long run, this type of contingency model is most likely to be of heuristic and practical value to scientists and practitioners alike.

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Table 1

Correlations among Variables

	QIG	E_I	U	MEU	MEFF	SEFF
Quarterly Income Goal (QIG)	---					
Expectancy (E_I)	.414**	---				
Utility (U)	.226	.378**	---			
Maximum Expected Utility (MEU)	.395**	.871***	.693***	---		
Effort Ratings						
Manager (MEFF)	.342*	.280	.040	.236*	---	
Self (SEFF)	.323*	.314*	.451**	.357*		---
Performance (PERF)	.634***	.453**	.288	.531***	.259	.356*

Note. N = 44.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 2

Goal Setting and Expectancy Theory

Predictions of Effort

	Full Equation		Predictor Contribution[a]		
	R^2	F (2, 41)	β	ΔR^2	F (1, 41)
Manager's Effort Rating	.129	3.04*			
Maximum Expected Utility			.120	.012	.59
Quarterly Income Goal			.295	.073	3.62*
Self-Effort Rating	.167	4.10**			
Maximum Expected Utility			.272	.062	3.22*
Quarterly Income Goal			.216	.039	2.03

Note. $N = 44$.

[a] ΔR^2 is the unique increment in R^2 when a predictor is entered last into the regression equation.

* $p < .10$. ** $p < .05$.

Table 3

Goal Setting, VIE, and Effort

Predictions of Performance

	Full Equation		Predictor Contribution[a]		
	R^2	F (3, 40)	β	ΔR^2	F (1, 40)
Performance (Quarterly Income)	.502	13.44***			
Maximum Expected Utility			.308	.075	6.43*
Quarterly Income Goal			.483	.188	16.26***
Self-Rated Effort			.090	.007	.59

Note. $N = 44$.

[a] ΔR^2 is the unique increment in R^2 when a predictor is entered last into the regression equation.

* $p < .05$. ** $p < .01$. *** $p < .001$.